Preliminary Executive Summary

Project 1 - The consultants have created flexible tools for use by the Division, by LMEs, by counties and by the Legislature to explore different policy directions by assessing the service and cost implications through prospective simulation. Through analysis of simulation results and further research and comparisons to national standards, a Gap Analysis has been written and is in draft format. What follows is a summary of key steps, and highlights of findings and recommendations in the Gaps Analysis.

Chapter I – Methodology

- The consultants and executive leadership reached agreement upon:
  - A typology of operational definitions (i.e. defining significant variables used to classify consumers, clinical cohorts, cost and service utilization at a level of specificity that allowed each function to be quantified). These specifications included defining two payment sources (Medicaid and State General Revenues), three consumer disability categories (DD, MH and SA) and 4 age groupings (0-18, 19-21, 22-64, 65+), resulting in 24 (2X3X4) independent cohorts to be analyzed for utilization and cost information for each county in NC, with the exception of the Piedmont LME, which was not included in any of the data analyses.
- The first model, called the **Actual Model**, was calibrated to correspond to FY 2005 service use and cost patterns;
- The second model, called the Evidence Based Practices or **EBP Model**, was designed to reflect new types of EBP services being introduced, some of the current less effective services being reduced or eliminated, as well as projected reductions in State Facilities, increased treated prevalence and continuity of care in some disability cohorts, population increases and CPI increases through 2010.
- A third model, called the **Defined Benefit Model** was designed to reflect a minimum set of services and limits on service units that could be used to project costs in serving the non-Medicaid population in NC. The Defined Benefit Model reduced the population served by a County when it was serving more than 10% above the average treated prevalence as an initial step in limiting benefits. The Model can be further defined to limit the amount, scope or duration of service as the State examines its priorities and policies.
- Each Model incorporates a Master Summary Report organized according to the 24 cohorts that reports on total costs and units for each cohort and included calculations related to prevalence, treated prevalence, and service continuity for each cohort.
- Each Model incorporates a Summary by Disability as well as Summaries by Service, Counties and LMEs that present totals costs and units for

each service and makes per-capita calculations related to the cohorts and their combinations.

- Switches were established in the Models to allow instant grouping of counties or LMEs as a tool to determine the most effective patterns of services to be established within each LME and those services that were most cost effective to share among LMEs.
- Utilizing demographic and social indicators, comparative data from other states and prevalence data on the general population related to mental health risk factors, system capacity was analyzed.
- Model projections were run under various scenarios to determine where there were gaps in service, which services should be shared across LMEs, and to project expenses, population increases and increased penetration over a five year period beginning in FY 05-06.
- The models can be used to:
    - Change limits on services or restrict limits by payer.
    - Increase persons to be served in total, by age or disability cohorts, or by county where populations are underserved (low treated prevalence).
    - Use for one county or any groupings of counties to apply it to LMEs, regions or new geographical designation.
    - Increase or decrease payment rates by payer (Medicaid or IPRS).
    - Evaluate costs for bringing a new service online.
    - Examine gaps in service provision by county.

Chapter II – Foundations

This Chapter includes for each disability group the following:

☑ Foundations
☑ Policy Implications
☑ Outcomes Desired
☑ Components of an Ideal System of Support

- Executive Leadership and the Consultants agreed upon policy assumptions necessary for purposes of building the model. The Division leadership and the consultants also reached agreement on several outcome indicators that are represented in current requirements, through the SAMSHA and other sources that bore some consistency.
- Areas representing EBP for each disability were agreed upon. Some areas cross populations such as aging, supported employment and housing while others are population specific. Several elements are critical to management of existing resources:
    - **Redirect resources** to best practice parts of the budget, especially for new persons entering the system.
    - Require programs to practice from selected evidence based models.
    - Measure real life outcomes.
    - Gradually eliminate site-based programs.
    - Advocate for Ticket to Work and ADA Compliance.

    - Develop safe and affordable housing.
    - Examine healthcare integration options.
- **Equitably apply resources and eliminate layering** of services, such as payments for residential and day program, while requiring the increased use of natural and community supports.
- **Use Peer supports/consumer-operated services** – such as clubhouses or drop-in centers, warm lines, peer outreach, integration into crisis outreach teams and assertive community treatment teams, training, satisfaction and quality reviews, ombudsmen services, etc.
- **Prevention/early intervention and diversion services** are better for consumers and their families because it reduces the long-term negative effects of the illness and initiates the recovery process at a time when the disabling effects of the illness are minimal.
- **Improve Crisis services**
- **Medical and clinical treatment/medication management**- Algorithms that have promoted medication best practices should be implemented across the State.
- **Services for families** – Psycho-educational classes for families produce better outcomes for families and the individual with mental illness. Consumers and families should receive these services at admission as an introduction to treatment.
- **Services for persons with co-occurring mental illness and substance abuse disorders**. Co-occurring disorders are major contributing factors in loss of housing, treatment non-compliance, emergency room use, and re-hospitalization.
- **Geriatric services** – There should be integration and coordination among resources important to elders, particularly primary health care, mental health and substance abuse treatment, and elder services such as homemakers, meals-on-wheels, and visiting nurse services.
- **Housing** – People with serious mental illnesses have difficulty locating and maintaining safe, affordable housing.
- **Employment** – The technology of successful supported employment programs is well documented. In SA employment has been positively correlated with retention in treatment.

Chapter III – Population and Prevalence

This Chapter includes the following:

☑ State to State and National Comparisons
☑ Prevalence Rates
☑ Treated Prevalence
☑ Maps of LME Levels of Treated Prevalence by Population
☑ Per Capita Expenditures
☑ Rates of Community versus State Facility Service

- The NC enrollment in Medicaid is below national average

- From an analysis of the treated prevalence and services received we know that the NC system is serving more people in hospital settings than the national average, fewer in specialty services and far more than the average in traditional outpatient settings.
- NC is below the national average for enrollment of the disabled and therefore would be expected to show less intensive utilization of mental health services with all other things being equal. However this raises the question of whether citizens who are disabled are being adequately assisted in obtaining benefits to which they are entitled. The relatively large enrollment of adults who are income eligible may not meet target population criteria for treatment as is possibly the case with the high number of foster children.
- The national average for treated prevalence is 19 per 1,000 population. NC is above the national average in overall treated prevalence, without regard to specific disabilities, with an average treated prevalence rate of 22.86 per 1000 population. While this number could generally be interpreted as favorable, examination of the numbers behind it reflect an uneven treated prevalence rate among the three disability cohorts.
    - NC's public MH/DD/SA services reached 12.2% of children with DD, 32.5% of adults with DD, 33.4% of those estimated to have a serious mental illness, 34.9% of those with a serious emotional disturbance and 8.4% of those with substance abuse disorders.
    - NC's treated prevalence rate and the per capita spending for persons with developmental disabilities is ranked 27th in the nation (close to the average). In NC 61% of people with developmental disabilities were enrolled in the CAP-MR/DD program. The national enrollment average in the Home and Community Based Services waivers (HCBS) was 81.3%. Nationally 18.3% were enrolled in ICF-MR while that number was 38.9% in NC. NC might consider increasing the number of citizens in the CAP-MR/DD program while decreasing ICF-MR. The combined return on investment for NC is high for HCBS and ICFMR with 62.6 % of the expenses paid by the Federal government.
    - NC's per capita spending on mental health is one of the lowest in the nation at $16.8 North Carolina is ranked 43 out of 51 States submitting data in FY 2003.
        - While the national average percentage of expenditures spent on Inpatient Programs is 37.1 %, (median value = 42%) NC spent 65.5 % of total expenditures in this category.
        - Consumers who visit the emergency room frequently use large quantities of prescription narcotics and few of these consumers with substance abuse disorders receive treatment for that condition. Findings indicate the need to: improve screening in the emergency room.
        - Persons with substance abuse disorders – 52 counties were below the statewide weighted average of 8.5% for treated

prevalence and 66 counties were below the statewide average for continuity.

- Adults with Severe Mental Illness – 27 counties were below the statewide weighted average of 33.4% of treated prevalence. The continuity factor for child and adult mental health indicates 55 counties below the statewide average.

Chapter IV – Service Utilization

This Chapter includes the following:

☑ Introduction to Capacity of NC's Community Based System
☑ Available Service Array
☑ Utilization by Age and Race
☑ Service Continuity Factor
☑ County by County Availability of EBPs - Maps
☑ Service Intensity- Level of service provided
☑ Screening, Triage & Referral

To get a good idea of how available EBP services are, we studied enrollment rates and utilization for the following services as they apply for both persons with mental illness and substance abuse (and in the case of supported employment for persons with developmental disabilities):

- Assertive Community Treatment Teams
- Community Detoxification
- Community Inpatient
- Drop-In
- Facility-Based Crisis
- Psycho-social Rehabilitation
- Respite
- Supported Employment

Data are then provided for state psychiatric hospitals, traditional outpatient and community rehabilitation services that include "workshops" as a means of comparison to EBP.

The array and amount of *crisis services* throughout the state are generally not adequate to meet the needs of most communities and most individuals in the eligible populations. There is currently no systemic way statewide for LMEs or other primary service providers to know when persons in their care enter into a crisis state or emergency services setting. Communication among hospital emergency rooms and other crisis intervention providers is variable. In some areas, adults and people are ending up in the state hospital, intensive residential settings, local jails, or other high cost, high intensity settings when they could be diverted or served more effectively in less intensive ways and connected or reconnected more quickly to on-going community-based care.

There are few *jail diversion* projects or services that work to keep adults or children out of correctional institutions at the local level. Critical Issues for Facility Based Crisis include:

- The State needs to change methods of reporting and require emergency service data on all encounters
- Expand services based on the reports' recommendations
- Provide jail diversion programs, particularly pre-booking.
- Improve communication among hospital emergency rooms and other crisis intervention providers
- Establish the authority with LMEs for the State hospital front door
- Insist that programs are developed to provide intervention close to where the consumer resides through the use of mobile programs or integrated services in non urban areas.
- Provide sufficient funding for mobile services.

Other Gaps

- The population in 2010 will have 1,167,894 Elderly. Note that 15 to 25 % of older adults in the United States suffer from significant symptoms of mental illness, yet the Division of MH/DD/SA provided services to only 14,949 individuals over the age of 65, comprising 5.66% of the total population served.
- Minority Groups do not appear to be underserved as a percentage of all recipients of public services. In fact, NC ranks higher than the nation and the Southern Region in serving minority populations
- However, rural populations are underserved compared to more dense population areas.

NC might want to examine the STR function to ensure that only individuals who meet "target population" criteria are being admitted. The Access Penetration rate for NC is 14.2 per 1000 compared to the National average of 12.6 per 1000. This is very positive, yet it should be examined to ensure the wrong people are not "getting in the door".

The major problem in NC at this time is that even with the high numbers of North Carolinians in need of mental health services, many do not receive an adequate continuity of care. As demand increases, continuity of services - as measured by number of visits per year - is declining. The continuity for persons with developmental disabilities is excellent. It is not the same for persons with mental illnesses, children with serious emotional disturbances (although they fared better than adults) and persons with substance abuse disorders. It is costly to provide "enough" care to make a difference and the State of NC will have to decide how much is "enough".

Chapter V – Projected Start-up and Total Funding Needed

This Chapter includes the following:

- ☑ Findings of the EBP Stochastic Models for the years 2005 through 2010 based on 2005 population and utilization data trended forward for each year.
- ☑ A Crossover Analysis for services to be shared
- ☑ Development of new services and expanded deployment of existing services
- ☑ Qualified Staff
- ☑ Percent of the population expected to use state-level facilities by LME
- ☑ Start-up and the total funding needed over a five-year-period (2005 -2010) from the Trust Fund for Mental Health, Developmental Disabilities and Substance Abuse Services and Bridge Funding Needed to implement the long-range plan reasonably over the ensuing five-year period
- ☑ Costs for each year if all desired services were provided with average Access (treated prevalence) and intensity and continuity through 2010.
  - **Population Growth** - at an annual rate of approximately 1.5% per year.
  - **Cost Per Unit of Service** - an average of 2% per year.
  - **Annual Persons Served** - increase with increases in treated prevalence
  - **Average Monthly Caseloads** - increase continuity of care

The collective impact of these changes on total system-wide costs follows and shows the amount of additional dollars needed in the NC MH/DD/SA system to bring treated prevalence rates to the national average, to reduce institutional care, and implement new evidence based practice, to sustain population growth and the economic increases the system is currently facing. The net effect is $598,994,850 over a five year period: the difference between Actual Costs in 2005 of $1,945,660,895 and the EBP Model in 2010 of $2,544,655,745. This is an average additional cost of $119,798,790 each of the 5 years, FY2006 - FY2010.

- Mechanisms to Reduce Impact
  - State Facility Downsizing
  - Community Medicaid Increase
  - Implement and Standardize Ability to Pay
  - Pursue Alternative Funding Sources for Room & Board (i.e. SSI)

Community-Based Services Only

Year	By Disability	Base Population Adjusted by Share of Total Cost	Total Annual Caseload	Average Monthly Caseload	Persons Served Annually as A Percentage of Population	Total Monthly Cost for Community-Based Services for This Cohort	Annual Cost for Community-Based Services for This Cohort	Average Monthly Cost per Case	Average Annual Cost per Case	Annual Cost on a Per Capita per Month Basis
	DD	8,007,147	28,902	20,393	0.36%	$62,792,591	$753,511,094	$3,079	$26,071	$7.84
	SA	8,007,147	40,061	9,434	0.50%	$7,013,627	$84,163,521	$743	$2,101	$0.88
	MH	8,007,147	218,394	81,284	2.73%	$64,039,648	$768,475,775	$788	$3,519	$8.00
2005	Total	8,007,147	287,357	111,111	3.59%	$133,845,866	$1,606,150,391	$1,205	$5,589	$16.72
	DD	8,138,219	28,902	20,393	0.36%	$60,222,161	$722,665,932	$2,953	$25,004	$7.40
	SA	8,138,219	41,493	9,622	0.51%	$7,360,159	$88,321,905	$765	$2,129	$0.90
	MH	8,138,219	218,947	82,254	2.69%	$61,443,943	$737,327,320	$747	$3,368	$7.55
2006	Total	8,138,219	289,343	112,269	3.56%	$129,026,263	$1,548,315,156	$1,149	$5,351	$15.85
	DD	8,269,290	28,902	20,393	0.35%	$63,085,495	$757,025,944	$3,094	$26,193	$7.63
	SA	8,269,290	44,327	9,811	0.54%	$7,688,131	$92,257,570	$784	$2,081	$0.93
	MH	8,269,290	219,580	82,883	2.66%	$70,017,043	$840,204,522	$845	$3,826	$8.47
2007	Total	8,269,290	292,809	113,087	3.54%	$140,790,670	$1,689,488,036	$1,245	$5,770	$17.03
	DD	8,400,362	28,902	20,393	0.34%	$63,914,833	$766,977,996	$3,134	$26,537	$7.61
	SA	8,400,362	44,135	10,000	0.53%	$8,354,279	$100,251,342	$835	$2,271	$0.99
	MH	8,400,362	219,790	83,723	2.62%	$70,381,279	$844,575,353	$841	$3,843	$8.38
2008	Total	8,400,362	292,827	114,115	3.49%	$142,650,391	$1,711,804,691	$1,250	$5,846	$16.98
	DD	8,531,433	28,902	20,393	0.34%	$65,902,605	$790,831,262	$3,232	$27,363	$7.72
	SA	8,531,433	45,760	10,188	0.54%	$9,394,500	$112,733,998	$922	$2,464	$1.10
	MH	8,531,433	220,541	84,536	2.59%	$112,720,999	$1,352,651,986	$1,333	$6,133	$13.21
2009	Total	8,531,433	295,203	115,117	3.46%	$188,018,104	$2,256,217,246	$1,633	$7,643	$22.04
	DD	8,662,505	28,902	20,393	0.33%	$65,769,156	$789,229,870	$3,225	$27,307	$7.59
	SA	8,662,505	47,183	10,377	0.54%	$10,921,142	$131,053,703	$1,052	$2,778	$1.26
	MH	8,662,505	221,073	84,217	2.55%	$88,059,994	$1,056,719,927	$1,046	$4,780	$10.17
2010	Total	8,662,505	297,158	114,987	3.43%	$164,750,292	$1,977,003,501	$1,433	$6,653	$19.02

Summary Total All Services, Facilities, Global Allocations

	By Disability	Base Population Adjusted by Share of Total Cost	Total Monthly Cost for This Cohort	Annual Cost for This Cohort	Annual Cost on a Per Capita per Month Basis
	DD	8,007,147	$79,826,456	$961,649,431	$10.01
	SA	8,007,147	$10,599,013	$128,434,575	$1.34
	MH	8,007,147	$86,116,775	$1,033,413,142	$10.76
2005	Total	8,007,147	$176,542,245	$2,123,497,148	$22.10
	DD	8,138,219	$77,411,543	$932,675,024	$9.55
	SA	8,138,219	$11,299,573	$136,833,286	$1.40
	MH	8,138,219	$83,604,707	$1,003,279,110	$10.27
2006	Total	8,138,219	$172,315,823	$2,072,787,420	$21.22
	DD	8,269,290	$80,445,712	$969,092,847	$9.77
	SA	8,269,290	$12,611,050	$152,555,067	$1.54
	MH	8,269,290	$92,264,260	$1,107,220,851	$11.16
2007	Total	8,269,290	$185,321,022	$2,228,868,765	$22.46
	DD	8,400,362	$81,416,721	$980,744,990	$9.73
	SA	8,400,362	$13,218,184	$159,841,982	$1.59
	MH	8,400,362	$91,718,318	$1,100,664,332	$10.92
2008	Total	8,400,362	$186,353,222	$2,241,251,304	$22.23
	DD	8,531,433	$83,562,315	$1,006,497,362	$9.83
	SA	8,531,433	$15,079,683	$182,171,366	$1.78
	MH	8,531,433	$133,857,838	$1,606,348,653	$15.69
2009	Total	8,531,433	$232,499,836	$2,795,017,380	$27.30
	DD	8,662,505	$83,556,466	$1,006,431,415	$9.68
	SA	8,662,505	$17,636,491	$212,845,515	$2.05
	MH	8,662,505	$110,488,600	$1,325,378,815	$12.75
2010	Total	8,662,505	$211,681,557	$2,544,655,745	$24.48

Comparison Defined Benefit Model 2005, EBP Model 2005 & Actual Model 2005

Model	Base Population Adjusted by Share of Total Cost	Total Annual Caseload	Average Monthly Caseload	Persons Served Annually as A Percentage of Population	Total Monthly Cost for Community-Based Services for This Cohort	Annual Cost for Community-Based Services for This Cohort	Average Monthly Cost per Case	Average Annual Cost per Case	Annual Cost on a Per Capita per Month Basis
Actual Model 2005	6,849,084	126,072	39,226	1.84%	$19,476,308	$234,822,436	$497	$1,863	$2.86
Defined Benefit Model 2005	6,853,718	260,618	107,927	3.80%	$38,441,277	$461,295,318	$356	$1,770	$5.61
EBP Model 2005	6,849,084	126,072	39,226	1.84%	$41,379,851	$499,523,844	$1,055	$3,962	$6.08
Net Differences Actual less Defined	(4,634)	(134,546)	(68,701)	(0)	($18,964,968)	($226,472,882)	$140	$93	($3)
Net Differences EBP less Defined	(4,634)	(134,546)	(68,701)	(0)	$2,938,574	$38,228,526	$699	$2,192	$0

Chapter VI Conclusions & Recommendations - Highlights

- To implement a strong system the State must provide leadership with clear and enforceable policy parameters that are communicated through administrative rules and contracts.
- There are gaps in the information system infrastructure that impede the collection of data necessary for routine monitoring and analyses of the system.
- Services to adults and children with substance abuse and mental illnesses are insufficient in scope and amount, the annual rates of treated prevalence are not adequate and the service continuity and intensity is not sufficient to achieve expected outcomes, thereby increasing hospital and residential admissions unnecessarily, and sustaining resources in restrictive care that could be shifted to community-based services.
- The current private provider system is fragmented. The State and LMEs must identify ways to work with providers to design alternative arrangements that promote capacity and efficiency to ensure good coordination of care.
- There is an appearance of some lack of local compliance regarding the Core Customer to be served using public mental health dollars.
- The NC enrollment in Medicaid is below the national average and if the enrollment were increased, the uninsured number might reflect the national average.
- The NC system is serving more people in hospital and institutional settings than the national average, fewer in specialty services, and far more than the average in traditional outpatient settings that are ineffective with the populations requiring services.
- NC needs to improve screening in the emergency room to identify alcohol or drug disorders and mental illness; strengthen linkages between the emergency room and the chemical dependency and mental health treatment systems to increase penetration rates, especially for alcohol or drug treatment
- One big problem in NC at this time is North Carolinians in need of Mental Health and Substance Abuse services do not receive an adequate intensity of care.
- People are often admitted to State Facilities in NC without earlier consideration of community-based alternatives.
- The array and amount of crisis services throughout the state are not adequate to meet the needs of most individuals in the population.
- Housing and supportive living arrangements for adults are not widely available throughout NC.

- When services have high unit cost but low utilization they meet the criteria for them to be considerate possible candidates for cross-over or shared services.
- The most difficult issue is support for a cultural shift from traditional modes of practice to EBP, recovery technologies, empowerment, and resiliency strategies.
- Data shows that the State needs a reasonably aggressive rate of State Facility downsizing to stay ahead of population trends and economic increases.
- A Continuity of Care Index was calculated and is included in the Model for each county. It is clear that continuity of services is insufficient to ensure system effectiveness.
- MH transformation requires an increase in Division monitoring and technical assistance which cannot be effectively pursued with current levels of staff.
- If the State does not downsize hospitals as part of the process and create a system for control of state facility admissions (or payment for admissions) those with "principal agent" conflicts will continue to fill beds and the costs will continue to grow.

Project 2- By mid to late October the draft final product and report will be issued for this project related to equitable distribution of funding. The project builds directly off the Models utilized in the first project and is called **the "Idealized Model".**

To create a redistribution of funds the Model "squeezes" the system for increased local funds and increased and effective Medicaid billing and increased enrollment and eligibility for persons with disabilities. The local funding issue is determined based upon a number of analysis of local/statewide factors such as tax base and levels of poverty.

The model then seeks to level the playing field in terms of continuity of care, treated prevalence (squeezed to averages) Price and Population effects. These elements are built from the EBP Model. The Model is completed at this point.

The final phase of project 2 is to examine funding strategies that may be appropriate for consideration at a statewide level. The consultants are awaiting responses from the Division regarding desires of the State to entertain or not various potential Medicaid waiver opportunities.